

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

I. Disposition of Claims

Claims 1-15 are pending in this application. Claims 1, 10, 13, and 15 are independent. The remaining claims depend, directly or indirectly, from claims 1, 10, and 13.

II. Objection(s)

The claims are objected to for minor informalities. For example, claim 12 was objected to for depending from claim 1, when claim 12 should depend from claim 10. Therefore, claim 12 has been amended to correct this typographical error and now depends from claim 10.

Additionally, claim 10 was objected to because the term “element” has been mistakenly omitted from the claim language. This term has now been inserted into the claim language.

In view of the above corrections, withdrawal of the claim objections is respectfully requested.

III. Rejection(s) under 35 U.S.C § 102

Claims 1-4, 6-10, and 13-15 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,450,271 issued to Tibbitts *et al.* (hereinafter "Tibbitts"). Claims 1, 10, 13, and 15 have been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

The present invention relates to a method of forming a tooth rock bit. As recited in amended claim 1, the method includes attaching at least one cutting element being predominantly steel to a surface of a cone and depositing a hardfacing layer on the least one cutting element prior to the attaching of the at least one cutting element to the surface of the cone. Further, the hardfacing layer includes a hardmetal coating.

As recited in amended claim 10, the method includes attaching a first cutting element and a second cutting element both being predominantly steel to a surface of a cone. Prior to attaching the first and second cutting elements, a hardfacing layer is deposited on the first and second cutting elements. Further, the hardfacing layer includes a hardmetal coating.

As recited in amended claim 13, the method for forming a tooth rock bit includes forming at least one cutting element being predominantly steel. The at least one cutting element has a hardfacing layer, which includes a hardmetal coating. Additionally, the method includes attaching the at least one cutting element to a surface of a cone. The method further includes, prior to the attaching, depositing a layer of the hardfacing on the at least one cutting element at substantially the same time as the forming of the at least one cutting element.

The present invention as recited in amended claim 15 relates to a tooth rock bit. The tooth rock bit includes a cone having a surface and a preformed predominantly steel cutting element attached to said surface. The predominantly steel cutting element includes a hardfacing layer, which includes a hardmetal coating. The hardfacing layer is deposited prior to the preformed cutting element being attached to the surface of the cone of the rock bit.

In the amended claims 1, 10, 13, and 15, the cutting elements are predominantly steel and have a hardfacing layer, which includes a hardmetal coating. Advantageously, in certain application steel tooth bits are tougher and a longer-lasting tooth for increased durability and faster drilling rates. Tibbitts fails to disclose the present invention as recited in the amended claims. In fact, Tibbitts discloses tungsten carbide cutting elements having various hardfacing layers, e.g., polycrystalline diamond layers. The tungsten carbide insert bits as disclosed by Tibbitts (with or without diamond coatings) have more wear resistant cutter for a longer life, but suffer with respect to the combination of drilling rate and durability.

Because Tibbitts fails to disclose the claimed invention as recited in amended claims 1, 10, 13, and 15, claims 1, 10, 13, and 15 are patentable over Tibbitts. Claims 2-9, 11, 12, and 14, being dependent, are also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection(s) under 35 U.S.C § 103

Claims 5, 11, and 12 were rejected under 35 U.S.C. § 103(a) as being obvious over Tibbitts in view of U.S. Patent No. 4,940,099 issued to Deane *et al.* (hereinafter

“Deane”). Claims 1, 10, 13, and 15 have been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

As discussed above, Tibbitts fails to teach a predominantly steel cutting element having a hardfacing layer, which includes hardmetal coating, deposited prior to the predominantly steel cutting element being attached to the surface of a cone. Deane fails to provide that which Tibbitts lacks.

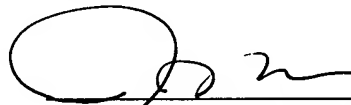
Deane also teaches tungsten carbide inserts having a hardfacing layer, but is completely silent to predominantly steel cutting elements including a hardmetal coating. Because Deane fails to provide that which Tibbitts lacks, claims 1, 10, 13, and 15 are patentable over Tibbitts and Deane, whether considered separately or in combination. Claims 5, 11, and 12, being dependent, are likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

V. Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05516.142002).

Respectfully submitted,

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